



# TRACERS

The American Board of Nuclear Medicine



A Member Board of the American Board of Medical Specialties

4555 Forest Park Boulevard, Suite 119 • St. Louis, Missouri 63108-2173 • Telephone: (314) 367-2225 • E-mail: [abnm@abnm.org](mailto:abnm@abnm.org) • Website [www.abnm.org](http://www.abnm.org)



Message from the Chair  
*Eric M. Rohren, M.D., Ph.D., Chair*

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Maintenance of Certification: Moving from Extrinsic Value to Intrinsic Value. [More Details](#)



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Forging a New Pathway for Training. [More Details](#)

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NEWSLINE: Combined Nuclear Medicine/Diagnostic Radiology Residencies: An Update  
*Henry D. Royal, M.D.—Executive Director  
American Board of Nuclear Medicine*

Reprinted with permission SNMMI Newsline J Nucl Med 2014 55:11N [More Details](#)

## 2013 ABNM Examination Results

### Certification Examination

Number of Candidates Who Took Exam	92
Number Who Passed	73
Pass Rate	79%

### MOC Examination

Number of Candidates Who Took Exam	127
Number Who Passed	123
Pass Rate	97%

## COMMENTS/FEEDBACK

The ABNM welcomes comments from diplomates and residents regarding issues raised in this Tracers or any other issues affecting the practice of nuclear medicine or certification processes.

Please email your comments to George M. Segall, M.D., Executive Director, American Board of Nuclear Medicine ([gsegall@abnm.org](mailto:gsegall@abnm.org))



## 2014 Issue 1

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### RELEVANT REFERENCES

- [Donations Received in 2013](#)
- [New Diplomates Who Passed the 2013 Certification Examination](#)
- [Congratulations to Our Diplomates Who Passed the 2013 MOC Examination](#)

### FUTURE EXAMINATION DATES

- Certification/ MOC Examination  
Week of October 6-11, 2014  
Week of October 5-10, 2015  
*application period begins in April for all Exams*
- In-Training Examination:  
Week of January 26-31, 2015

### QUICK LINKS

- [ABNM Website](#)
- [ABNM Board Members](#)
- [ABNM Lifetime Board Members](#)
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### BOARD OF DIRECTORS

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## Chair's Message



**Eric M. Rohren, M.D., Ph.D.**  
*Chairman, ABNM*

The ABNM recently convened for the 2014 Winter Meeting, the 90th meeting of the Board since its incorporation in 1971. There were several leadership transitions at this meeting, including the welcoming of Dr. Janis O'Malley as the new Chair as I transition to the role of Past-Chair. Dr. Louise Thompson now serves in the role of Vice-Chair, while Dr. Munir Ghesani takes on the role of Secretary Treasurer.

The Board is also transitioning its executive leadership, with Dr. Henry Royal turning over the role of Executive Director to Dr. George Segall. Dr. Royal will continue to serve in an advisory role for the coming 6 months, and Dr. Tony Parker will remain as Associate Executive Director. At the meeting, Dr. Segall outlined some of his vision for the Board in the coming years, and we are all very excited to welcome him to this new role.

This was a year of transition for Board members, as well. In addition to the transition of Dr. Segall, we bade a fond farewell to Drs. Leonie Gordon, David Mankoff, and Lalitha Ramanna. Their hard work and dedication during their tenure on the board is tremendously appreciated. After careful review of a slate of outstanding candidates, four new Directors were elected to the Board to replace the outgoing members:



**Joanna R. Fair, M.D., Ph.D.**



**Erin E. Grady, M.D.**



**Heather A. Jacene, M.D.**



**Daniel A. Pryma, M.D.**

Dr. Joanna Fair from the University of New Mexico Cancer Center, Dr. Erin Grady from the Christiana Care Health System, Dr. Heather Jacene from the Dana-Farber/Harvard Cancer Center, and Dr. Dan Pryma from the Hospital of the University of Pennsylvania. Each of the new Directors brings with them a wealth of experience and a great degree of enthusiasm.

The Board is acutely aware of the challenges facing our diplomates out in practice, particularly the new and upcoming graduates of ABNM training programs. The Board continues to explore ways to collaborate and partner with other ABMS member boards to find efficiencies and synergies, and to avoid duplication of efforts. One avenue of exploration is with the American Board of Radiology to identify areas of overlap and alignment in our operational and strategic initiatives, so that the two boards can align on issues pertaining to MOC and beyond.

The new website went live in late March and we will continue to develop and make changes to the website which will allow us to improve our service to diplomates. An updated portal is needed, with access to MOC information, updates on board activities, and important links to resources around the web. It is critical that we provide value and service to our diplomates in the face of shifting landscapes in the realm of MOC and MOL.

It has truly been a privilege to serve as the Chair of ABNM for this past year. We are making progress on many of our projects, including the long-awaited updates to the website, in order to make [abnm.org](http://abnm.org) the go-to source for education credits and MOC tracking for our diplomates. There are many discussions ahead of us as the healthcare system undergoes substantial administrative and organization changes, but we look forward to working with our fellow ABMS Boards to navigate the waters ahead.



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## Message from the Executive Director

### *Maintenance of Certification: Moving from Extrinsic Value to Intrinsic Value*



**George M. Segall, M.D.**  
Executive Director, ABNM

The American Board of Nuclear Medicine (ABNM) Maintenance of Certification (MOC) requirements began in 2007. It has been a requirement for all ABNM diplomats since 1992. Since 2011, the American Board of Medical Specialties has been listing on its public website whether physicians are meeting MOC requirements, regardless of whether they have lifetime or time-limited certification ([www.certificationmatters.org](http://www.certificationmatters.org)). Participation in MOC is becoming a more frequent requirement of credentialing bodies, payers, and accrediting organizations. The Centers for Medicare and Medicaid Services (CMS) provides a financial incentive for physicians who are participating in PQRS and participate more frequently in MOC than required by their specialty board ([http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Maintenance\\_of\\_Certification\\_Program\\_Incentive.html](http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Maintenance_of_Certification_Program_Incentive.html)).

Participating in a program because it is a requirement is an example of its extrinsic value. A program only with extrinsic value, however, is less desirable than a program with intrinsic value. A program with intrinsic value to physicians is one that significantly improves knowledge and skills in a

way that is better, more convenient and time-efficient, and less expensive than other methods. A program with intrinsic value will be widely adopted regardless of whether it is required.

One of my goals as Executive Director is to improve MOC so that it has greater intrinsic value. I would like to see physicians eager to participate in MOC. How many of us go to a meeting and attend a continuing education session designated for SAM credit because we need to earn an average of 8 hours per year, and not because the topic is important to our practice? How many times have we attended an educational session where the audience response system did not truly enhance our learning experience?

How many of us look at the MOC exam as an opportunity to self-direct our education to areas where we would like to improve our knowledge and skills? How many of us have used the results of the MOC exam to improve our knowledge in areas that we are weak?

How many of us have done a Practice Improvement Assessment (PPA)? How many of us who have done a PPA found that it actually improved our practice?

ABNM will be working steadily on improving the intrinsic value of MOC to its diplomates. I encourage everyone to share his or her ideas on how we can improve MOC by sending an email to [abnm@abnm.org](mailto:abnm@abnm.org).



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## Associate Executive Director's Message

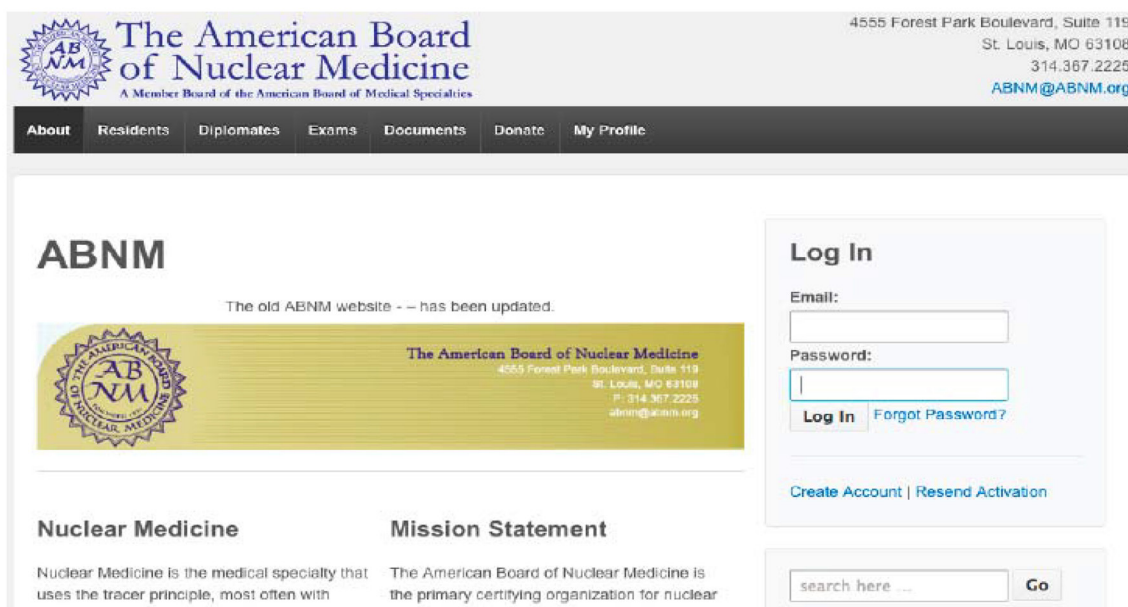


J. Anthony Parker, M.D., Ph.D.  
Associate Executive Director

### New ABNM Website

The ABNM will launch a new website in the spring. It will have a freshened look-and-feel. But more important, the new website will be based on a more modern architecture which will allow for more facile updating.

One of the important features of the new website will be proper recording credits from the CME Gateway. Many of the problems with the old site will be corrected, but we still expect some problems to exist. Some of the larger boards beta test website changes with a group of diplomates larger than all of us. We depend on the diplomates alerting us to problems. When the new website goes live, if you discover any problems, please contact us at [abnm@abnm.org](mailto:abnm@abnm.org).



The Board feels it needs to keep diplomates more adequately informed about the status of their MOC progress through e-mail updates. Shortly after the new website goes live, if you have a gap in MOC requirements, you will receive an e-mail reminder every two months. At the beginning of each year, everyone will receive an e-mail identifying gaps from the prior year if any and the MOC requirements for the new year.



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## Executive Director Emeritus Report 2013 Annual Report



**Henry D. Royal, M.D.**  
*Executive Director Emeritus  
ABNM*

This is the third ABNM annual report and if you read the byline carefully you will note that it will be the last annual report authored by me. I stepped down as the executive director after the Board meeting in February. George Segall is the new Board executive director.

The purpose of this report is to explain the mission of the ABNM, to review our business plan and to disclose how your fees and donations are spent. The section on the mission of the ABNM has not changed significantly from the text of the last 2 years. The distinction between Boards and specialty societies is often confused and therefore deserves repeating.

### Mission Statement

Our mission is unchanged and is summarized in our mission statement.

#### *ABNM Mission Statement*

*The ABNM is the primary certifying organization for nuclear medicine physicians in the United States. The Board serves the public through assurance of high quality patient care by establishing standards of training, initial certification, and continuing competence of physicians providing nuclear medicine diagnostic and therapeutic services.*

The mission of boards is different than specialty societies because boards primarily respond to the needs of the public whereas specialty societies primarily respond to the needs of their members. This difference is apparent from the differing governance structure of boards and specialty societies. Future board members are elected by current board members whereas the leadership of specialty societies is typically elected by the membership of those societies.

Boards play a critical role in assuring the public that the profession can be trusted. Ironically, by giving away some of our autonomy to the public and by gaining some of the public's trust, we retain some of our ability to self-regulate. If we lose the public's trust, others will regulate us.

Our current health care system is unsustainable. During this period of uncertainty, boards are one of the few trusted physician organizations that will have some input into the future of healthcare. For example, CMS continues to be very interested in recognizing and rewarding quality in health. The ABNM is one of only 11 ABMS boards whose MOC program is recognized by CMS as a marker for quality.

The majority of diplomates recognize the unique role of the ABNM and support us with payment of fees and generous donations. Although we probably do not express our gratitude often enough, we are very grateful for your support and we make a very conscious effort to use the resources you provide us prudently. I hope all diplomates appreciate the work of our unpaid board members who work tirelessly on behalf of the board. They all participate in MOC and try to anticipate future changes to MOC that are mandated by the American Board of Medical Specialties (ABMS).

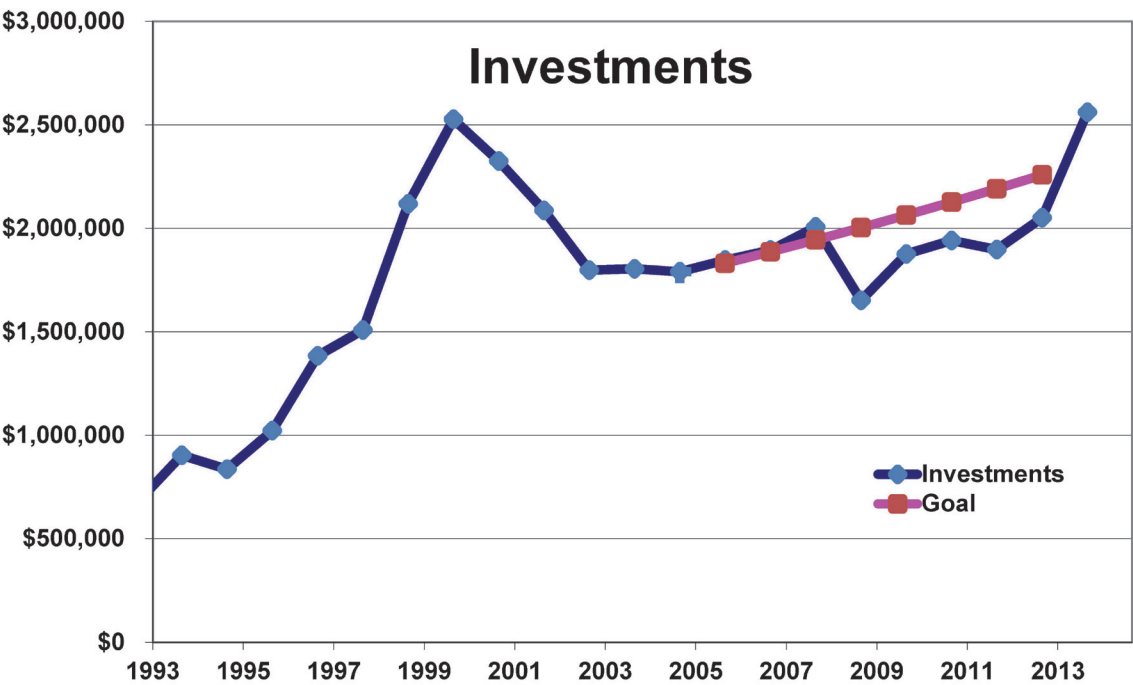
**ABNM Business Plan**

The ABNM is one of the 3 smallest ABMS boards. Many of the costs (developing and giving exams, developing and maintaining a website, etc.) of meeting all of the ABMS requirements for boards are large and are not greatly affected by the number of diplomates. In order for the ABNM to be financially viable, we need to be very creative in figuring out how to do things efficiently and inexpensively. Despite our efforts, we recognize that our unit costs are high because of the small number of our diplomates.

In 2005, the ABNM adopted its current business plan. At that time the ABNM had about 1.8 million dollars in assets. The board decided that it would be prudent to grow our assets by 3% per year to keep up with inflation. The Board also expected to earn an average of 6% per year on these assets which would mean half of the income (a little less than \$60,000) could be used to support operations. As shown in the graph below, the board compliance with this plan was good until 2008 when there was a major drop in the stock market. Note that the assets of the board have not increased significantly over the last 10 years.

Having a business plan allows the board to only increase fees when absolutely necessary. The ABNM has not increased its certification exam fee for the last 5 years. The MOC examination fee is decreasing by \$205 per year so that in 10 years the entire cost of the MOC exam will be included in the annual MOC fee (which was raised to \$400 per year in 2012 to accommodate this change). The finance committee also reviews the income and expenses of the board each month and compares these data with prior years so it can immediately identify any unanticipated expenses.

2013 was a good year for the stock market so the ABNM investments have grown accordingly. For the first time since 2007, our investment portfolio has exceeded our goal. It is satisfying to have met this goal before leaving the ABNM.

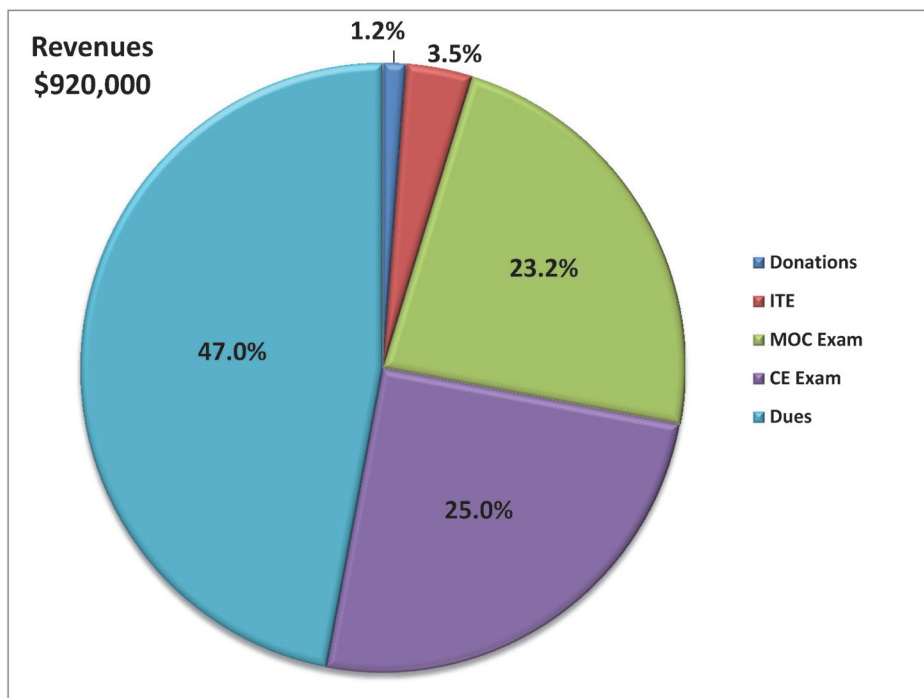


## 2013 Revenues and Expenses

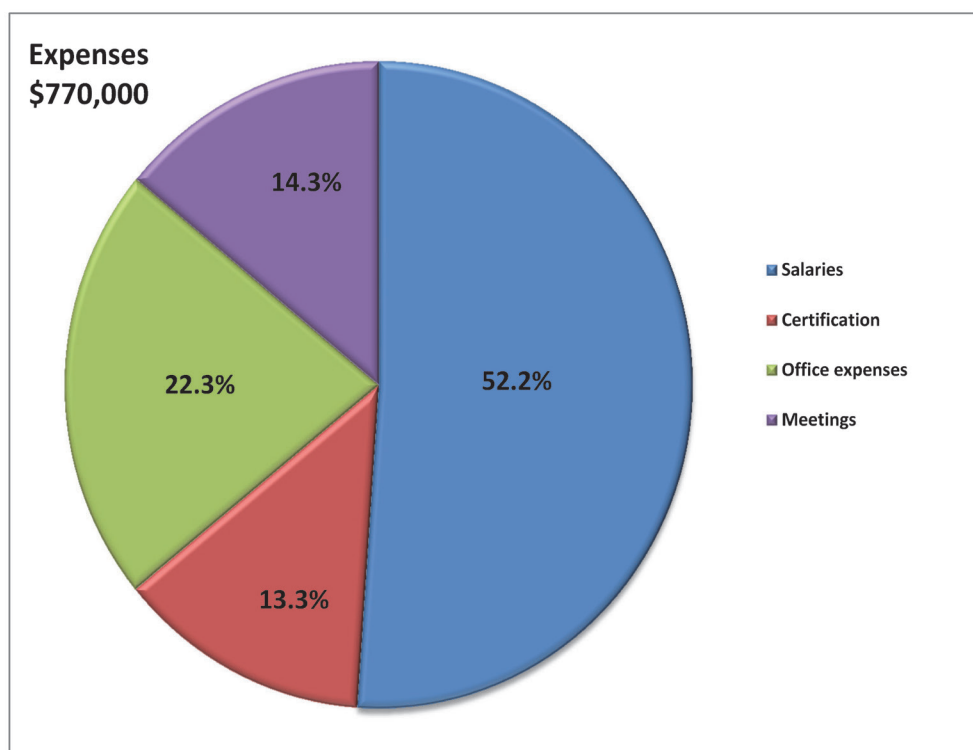
The best way to determine the revenues and expenses of any nonprofit organization is to go to the website [www.guidestar.org](http://www.guidestar.org). The 990s of all nonprofits can be found on this site.

Below, the revenues and expenses of the ABNM are summarized. The major source of revenue for the board is its diplomates. As shown in the pie chart below, the ABNM's total revenue for 2013 was about \$920,000. 1.2% of revenues came from donations, 3.5% of the revenues were from the in-training exam (ITE), 23.2% was from the MOC Exam, 25% was from the Certification exam and 47% was from annual MOC fees.

ABNM expenses are shown in the expense pie chart. As with any nonprofit organization, the largest expense is salaries (52.2%). The ABNM has 7 employees (4 office employees and 3 members of the executive staff [Drs. Segall, Parker and Royal]). As stated above, our board members are not paid. Expenses directly related to the certification process (13.3%) include the cost of a psychometrician, seat charges from the PearsonVue sites giving the exam and dues the ABNM pays to ABMS. Office expenses (rent, utilities, maintaining a website, lawyer's fees, etc.) (22.3%) and the cost of holding 2 board meetings a year each account for about 14.3% of total expenses.



There has not been a significant change in revenues and expenses except that the Board has had a significant additional expenditure this year, a much needed allocation of over \$80,000 to redesign and modernize our website.





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## MOC Committee Update

*Kirk A. Frey, M.D., Ph.D., MOC Committee Chair*



**Kirk A. Frey, M.D., Ph.D.**  
*MOC Committee Chair, ABNM*

Since our last issue of Tracers, there has been relatively little change in ABNM MOC requirements or its structure. The proposed ABMS MOC standards have been finalized and adopted for implementation in January 2015. Overall, from the diplomate's standpoint the 2015 program will look very similar to the present. ABMS has placed emphasis on the delivery of value and reduction in burden in the MOC requirements. While there are some changes in language and description, the new standards largely follow the current program. The four part structure is the same, but the names have been changed to reflect the change in emphasis:

- Part I - Professionalism and Professional Standing
- Part II – Lifelong Learning and Self-Assessment
- Part III – Assessment of Knowledge, Judgment and Skills
- Part IV – Improvement in Medical Practice

The American Board of Medical Specialties (ABMS) is trying to balance the need for a credible MOC program against the burden on diplomates. The Federation of State Medical Boards (FSMB) recommended that their member medical licensing boards recognize MOC as being substantially equivalent to evolving Maintenance of Licensure (MOL) <http://www.fsmb.org/pdf/mol-fast-facts.pdf>. This recognition of the credibility of MOC for fulfilling licensure will be a big benefit for those participating in the ABNM MOC program. At the same, the 2015 standards (<http://www.abms.org/pdf/Standards%20for%20the%20ABMS%20Program%20for%20MOC%20FINAL.pdf>) state:

“Each ABMS Member Board will work to enhance the value of its Program for MOC and the experience of diplomates engaged in its Program including taking actions to increase the Program's quality, relevance, and meaningfulness and with sensitivity to the time, administrative burden, and costs (monetary and other) associated with participation.”

Diplomates who are currently active in MOC will find that the new standards will credit their past and ongoing activities from the current ABNM MOC program. Specific aspects of the individual components will change under the new standards, with most changes reflecting improved feedback to participants, and continuation of the wide range of activities available for individuals to meet the MOC requirements. The ABNM is currently working on a specialty specific patient safety module which will both fulfill this new requirement as well as providing Part II credits. A major revision to the structure of Part II activities resulting from changes in the AMA definitions and requirements for CME activities is discussed below by Dr. Parker. This should greatly simplify fulfilling the self-assessment requirements of Part II.



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## Reflections from a New Lifetime Board Member



**Leonie Gordon, M.D.**  
*Lifetime Board Member*

As my term for serving on the ABNM came to an end in February, I reflected on what I had accomplished while serving on the board and whether it was really worth all my time and effort. I was very excited when I received the call to tell me that I had been voted onto the board and then was told I had to take the Maintenance of Certification examination which I did and must admit, was concerned about my score. With that successfully done, I then became an active, rather vocal board member.

I do believe that the board contributes significantly towards enhancing the quality of nuclear medicine and takes appropriate measures to ensure high standards of training, certification and competence of all its diplomates. Although board meeting agendas are very long and consist of many routine matters, issues of concern are often discussed in depth and may result in follow up conference calls allowing important actions to be taken. ABMS (American Board of Medical Specialties) or ACGME affect board operation and decisions and often make ABNM relook at issues and change course.

The board does evaluate itself, its staff members, operation and costs and continually strives to improve. The board does listen to the diplomates and hears your concerns and desires and tries to take appropriate actions.

I put in tireless hours doing board work but believe I reaped many benefits including improved question writing skills, understanding statistics better and generally acknowledging how taxing it is to serve on a professional board. However, I do miss the camaraderie and wise counsel that develops amongst all board members, I hope I gave back to my profession in a meaningful way and know ABNM will continue to be strong even without me!



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## ABMS Evidence Library

*George M. Segall, M.D.—Executive Director, ABNM*

The American Board of Medical Specialties (ABMS) has an on-line evidence library, which highlights research studies and articles that demonstrate the value of Board Certification, and Maintenance of Certification (MOC). The evidence library can be accessed at <http://www.abms.org/EvidenceLibrary>. The library is updated as new data becomes available.

The evidence library is organized by topics, and is searchable using several different parameters. Only abstracts are provided, so users must retrieve articles using their own resources. One interesting article from the ABMS Evidence Library is summarized below.

The relationship between MOC and clinical knowledge of family physicians was studied by O'Neill et al. The authors wanted to compare the medical knowledge and clinical decision making skills of recent residency graduates versus seasoned physicians. The authors were able to make this comparison because physicians who are applying for initial certification by the American Board of Family Medicine (ABFM) and physicians who are taking the examination to maintain their certification must take the same examination.

Performances of 10,801 examinees were compared—2,440 seeking initial certification, and 8,361 seeking MOC—on the summer 2009 American Board of Family Medicine (ABFM) certification examination. The results demonstrated that diplomates without gaps in their certification outperformed both initial certifiers and those who had gaps in their certification. Family physicians who maintained certification performed better than recent graduates. They increased their examination scores by almost 17 points each successive time that they took the exam, with scores reaching their highest point 28 to 31 years after initial certification. The findings suggest that ABFM diplomates who maintain their certification perform better on the ABFM certification examination with additional years of experience until approximately 30 years after residency training.

Reference: O'Neill, Thomas R. PhD; Puffer, James C. MD. Maintenance of Certification and Its Association With the Clinical Knowledge of Family Physicians. *Academic Medicine* 2013;88(6):780-787



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## Changes in Part 2 MOC Requirements

*J. Anthony Parker, M.D., Ph.D.—Associate Executive Director*

There are two important changes in the ABNM MOC program that should decrease the burden of MOC – adoption of a 5-year look-back, and acceptance of self-assessment CME (SA-CME). The ABNM has changed the requirement for participation in MOC Part 2, Lifelong-Learning and Self-Assessment, and Part 4, Practice Performance Assessment, from cumulative to a 5-year look-back. The website will continue to keep your historical records, but participation in MOC will be determined only from the previous 5 year period.

The ABNM accepts self-assessment modules (SAM) qualified by any member board of the American Board of Medical Specialties (ABMS) for the self-assessment Part 2 requirement. The ABNM SAM credits are equal to the CME credits for the SAM. In addition, the ABNM now accepts types 2 and 3 AMA PRA Category 1 Credit™ (SA-CME) (see below) for the self-assessment requirement. Both SAM and SA-CME credit count toward the 8 self-assessment credits per year requirement.

The American Medical Association (AMA) Physician Recognition Award (PRA) and credit system define two types of CME credits that must include self-assessment – type 2, enduring materials, and type 3, journal-based CME. Enduring materials include print, audio, video and Internet materials, such as monographs, podcasts, CD-ROMs, DVDs, archived webinars, as well as other web-based activities. Journal-based CME comes from peer-reviewed, professional journal articles.

The difference between traditional self-assessment modules (SAMs) and SA-CME only relates to the organization that approves the credit. Traditional SAMs are approved by the ABNM or by any other member board of the ABMS. For example, a live presentation at meetings that includes self-assessment (AMA PRA Category 1 Credit™ type 1) is an example of activity that the ABNM may approve for SAM credit. AMA PRA Category 1 Credit™ including types 2 and 3 is approved by organizations accredited by the Accreditation Council for Continuing Medical Education (ACCME).

The MOC self-assessment requirements instituted in 2013 by the American Board of Radiology (ABR) are now very similar to those of the ABNM. The ABR defines 3-year requirements (25 self-assessment credits); the ABNM defines yearly requirements (8 self-assessment credits). But over 3 years the ABNM requirement, 24 self-assessment credits is very similar to the ABR requirement, 25 self-assessment credits. Although the requirements are very similar, the ABNM takes a broader view of specialty specific credits. Any CME that is useful for your practice is Nuclear Medicine specific. For example, correlative imaging is an important part of Nuclear Medicine; thus, correlative imaging CME is Nuclear Medicine specific.

The alphabet soup isn't of any importance. What is important for the ABNM diplomate is that activities called self-assessment modules, SAM, SA-CME, or type 2 or 3 AMA PRA Category 1 Credit™ all count toward the yearly 8 SAM credit requirement in Part 2 of MOC.

Some difficulties in reporting these credits electronically through the CME Gateway are being worked out. The old ABNM website did not report these credits properly. If you use the CME Gateway, do not self enter the self-assessment credits. The new website should properly credit these credits from the CME Gateway, including for credits earned in prior years.



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## The MOC Exam Experience: Recollections of 2013 Takers

*Drs. Joanna Fair, Erin Grady, Heather Jacene and Daniel A. Pryma*

Four of us were elected directors of the Board in 2013, but before becoming official members, we had a hurdle to overcome: the Maintenance of Certification (MOC) exam. Perhaps this qualifies all of us as gluttons for punishment. Because of the ramifications of a passing or failing score, the MOC exam instills quite a bit of angst. In this article, we will review the purpose of the MOC exam and share our experiences in an effort to alleviate some of the stress.

The ABNM MOC exam is part of the MOC process. Technically, it judges the so-called “cognitive expertise” component of MOC. Other components of MOC include professional standing, lifelong learning and self-assessment and practice performance assessment. The MOC exam must be taken at a minimum of every ten years, although it is possible to take the exam up to two years early. If taken early, the new certificate is valid for ten years from the expiration of the existing certificate, not from the test year.

The exam is not meant to be overly stressful, but rather representative of our specialty, prompting us to refresh and keep current with our knowledge. The MOC exam is made up of computerized multiple-choice questions, ranging from easy to difficult. Time allotted is four hours (shorter than the allotted 8 hours for the certifying exam). The MOC exam is not designed to be time-pressured; in 2013, all takers finished with time to spare.

The next section of the article includes some of the questions that we had during preparation for the exam. We are happy to share what we have learned.

### Will there be hard questions?

Psychometrics, the field that studies testing, has developed rules for good exam questions – questions that provide the best discrimination among test takers. One rule is that the average test taker should have about an equal chance of getting the question right or wrong. With such a relatively low probability of being answered correctly, the questions must be challenging, and all of the available answer choices should be reasonable. Some questions involve clinical judgment rather than a clear-cut correct answer. While the Board attempts to avoid obscure facts, few questions have immediately obvious answers. The overall passing score reflects this relatively low likelihood (~60%) of a test taker getting a correct answer on any given question. Because all MOC exam takers have previously passed the certifying exam, those who are keeping current should also be able to pass the MOC exam. Despite the hard questions, the MOC exam pass rate is high, ranging from 96-99% in recent years.

### Do I need to know unapproved radiopharmaceuticals and indications?

MOC is a continuous, life-long learning experience, reflecting physicians' need to stay current with changes in practice. Thus, the MOC exam may test knowledge of emerging radiopharmaceuticals and techniques. Purely pre-clinical or very early phase clinical research is not included, but radiopharmaceuticals and techniques in more advanced stages of development are fair game. Emerging tracers and techniques included on the MOC exam are generally the subject of frequent publications from multiple centers and are common topics of discussion at local, national and international meetings. Basic principles about these emerging applications, rather than details, are more likely to be tested.

### How are the questions ordered?

The ABNM MOC exam questions are presented in random order to each taker, and all takers get all questions to answer. You may get the easiest or the most difficult questions at the beginning of the test. The question difficulty does not change with correct or incorrect answers.

## **What was the question writer thinking?**

Many questions will have a capitalized word, such as BEST or MOST. In such questions, some or all of the answers may seem reasonable. The task is to pick the best or most likely answer.

While an individual may write questions that emphasize his or her point of view, a group of Board members review and edit the exam questions. This strives to lessen the emphasis on a particular view and instead reaches a consensus opinion. Despite all the work that goes into writing and vetting the questions, mistakes are still possible. After the exam period is complete, the performance of every question is reviewed. Poorly performing questions can be removed prior to scoring the examination.

## **What happens on the day of the exam?**

The MOC exam is given at Pearson VUE testing centers. These centers are conveniently located throughout the country, and they administer a wide variety of exams. When you check in for the exam, fellow test takers may be sitting for other medical board exams or wildly different tests such as language or information technology certifications. Each exam has its own requirements as to identification and documentation, so make sure you follow the directions carefully. You can also expect to be fingerprinted or have your palm vein pattern taken. You will be given a locker in which to securely store your belongings during the test (nothing is allowed in, including watches, for example). Once checked in, you will be called in and registered. The staff will take your picture and, at the appropriate time, will bring you to a computer. You will be given an erasable note board and marker for use during the exam. A computerized scientific calculator is also available to examinees. You will be given instructions on exam timing and what to do if you need to interrupt the exam, for example, to use the restroom.

Once the exam starts, the questions are given sequentially. You can always go back to questions and can even mark the questions that are uncertain for review later. Images are shown along with the questions, and there may be videos. The exam warns you if you have not seen all of the images/videos available with a question. The testing software is straightforward; however, if you have not taken a computerized test before, it is helpful to try the online tutorial sent with the registration material to familiarize yourself with the format and tools. Again, all test takers this past year finished with time to spare.

If you want to learn more about MOC, please visit our website, [www.abnm.org](http://www.abnm.org), and click on “Maintenance of Certification.” On the website, you can find a collection of sample exam questions to get a better sense of the style of questions you will be seeing on the exam. Another link that you may find interesting is this one to the “Maintenance of Certification FAQ brochure



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## Establishing a Dual Training Pathway in Nuclear Medicine and Diagnostic Radiology—The Stanford Experience

*Andrei Iagaru, M.D.—Director, Nuclear Medicine Resident Training Program at Stanford*

A dual training pathway in Nuclear Medicine (NM) and Diagnostic Radiology (DR) was created at Stanford in 2014 to facilitate the recruitment of medical students interested in Molecular Imaging, and to improve resident training in hybrid imaging. Our experience creating this pathway may help other Program Directors interested in establishing similar pathways at their institutions.

The first step was enlisting the support of the DR Program Director for the proposed pathway. Residents would enter the proposed pathway after completing one clinical year of training. During the first year of the proposed pathway (PGY2), residents would train in NM for 12 months under the direction of the NM program director. Residents would then train for four years in DR under the direction of the DR program director. Residents would receive 1 month of NM training during each year of the first three years, and 12 months of NM training during the fourth year of DR. Upon completion of both programs, residents would have 48 months of training in DR (including 15 months of NM), and a total of 27 months of training in NM.

The second step was getting approval for the proposed pathway by the Designated Institutional Official (DIO) for Graduate Medical Education, and the Graduate Medical Education (GME) Committee. Approval at Stanford required completing an application, and making a presentation to the GME committee explaining the academic need for the pathway.

The third step was to write to the American Board of Nuclear Medicine, and the American Board of Radiology, describing the pathway, and getting confirmation that graduates would be eligible to take the Certification Examinations of both boards.

Once all the approvals were obtained, the DIO at Stanford applied to the Accreditation Council for Graduate Medical Education (ACGME) for an Accreditation Data System (ADS) number. The application required a description of the curricula, and a letter of support from the GME committee.

After receiving an ADS number, the DIO registered the pathway with Electronic Residency Application Service (ERAS®) of the American Association of Medical Colleges (AAMC), and the National Resident Matching Program (NRMP).

We hope the pathway will be successful, and that other institutions will adopt similar pathways at their institutions to provide physicians with the skills necessary to advance the field of Molecular Imaging.



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## ABMS Update

*Henry D. Royal, M.D.—Executive Director Emeritus, ABNM*

The American Board of Medical Specialties ([www.ABMS.org](http://www.ABMS.org)) continues to be very active. The ABMS is the umbrella organization that assists the 24 ABMS primary certifying boards.

The ABMS plans to revise the MOC standards for 2015. This revision will be based on feedback from physicians, the public and other stakeholders. The main message received from physicians is that MOC should 1) be relevant to their practice, 2) eliminate redundancy, 3) be useful and 4) be efficient. Physicians would also like the requirements to be clear and not be changing constantly. The public largely echoed the 2001 IOM report entitled “*Crossing the Quality Chasm*”. MOC should help facilitate health care which is safe, effective, patient-centered, timely, efficient and equitable. Other important stake holders (e.g., payers) want to emphasize the need for care that is affordable and sustainable.

There are several new requirements that the Boards must meet. I have highlighted a few of these requirements by listing them below.

1. Each ABMS Member Board will work to enhance the value of its Program for MOC and the experience of diplomates engaged in its Program including taking actions to increase the Program’s quality, relevance, and meaningfulness and with sensitivity to the time, administrative burden, and costs (monetary and other) associated with participation.
2. Each ABMS Member Board will identify and convey that Board’s professionalism expectations to its diplomates and will incorporate professionalism learning and assessment activities into its Program for MOC.
3. Each ABMS Member Board will establish and maintain a process that provides former diplomates an opportunity to regain board certification.
4. Each ABMS Member Board will integrate Patient Safety principles into its Program for MOC requirements.
5. To assist diplomates in developing individualized Lifelong Learning and Self-Assessment programs, the ABMS Member Board will provide feedback to the diplomate about performance on secure examinations.

One initiative of the ABMS that we hope will decrease the burden of MOC on our diplomates is the multispecialty portfolio project. Rather than diplomates creating their own practice performance assessment activities, diplomates would be given credit for participating in multispecialty QI projects that are ongoing at their own institutions. These institutional projects would be pre-approved by the ABMS.

Several Boards, including the American Board of Radiology, have transitioned to a continuous certification model where certificates have no end dates. In this model, whether a physician is certified or not is solely dependent on whether she is meeting MOC milestones. The ABNM is considering adopting this model.

One major ABMS activity has been to work with the ACGME, foreign countries and other organizations to establish a similar accreditation and certification system in other countries. As you can imagine, the resources available for post-graduate medical education and lifelong learning vary greatly from country to country. Despite these obstacles, the first experience in establishing an ACGME-ABMS like system in Singapore has been very successful. Because of the few number of NM trainees in many countries, this activity does not have a significant impact on nuclear medicine. Although we do have some foreign nuclear medicine activities (e.g., our ITE exam is given in Australia and Singapore), it is unlikely this will be a major activity of the ABNM.



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## NEWSLINE: Combined Nuclear Medicine/Diagnostic Radiology Residencies: An Update

*Henry D. Royal, M.D.—Executive Director, American Board of Nuclear Medicine*

*Reprinted with permission SNMMI Newsline J Nucl Med 2014 55:11N*

At least 5 accredited nuclear medicine programs (Stanford [CA], University of Arkansas [Little Rock], Emory University [Atlanta, GA], University of Michigan [Ann Arbor], and St Luke's—Roosevelt Hospital Center [New York, NY]) have made substantial progress in establishing combined nuclear medicine/diagnostic radiology programs. The designs of these programs vary considerably. Some combined training programs consist of 5 years of training, including 4 years of diagnostic radiology training and a total of 24 months of nuclear medicine training. Twelve of the 24 months of nuclear medicine training are completed during the 4 years of diagnostic radiology training. Other combined programs consist of 4 years of diagnostic radiology training with 16 months of nuclear medicine included in the 48 months of radiology training.

The 5-year combined programs' goals are different from those of the 4-year programs. By identifying early in their careers individuals who are interested in nuclear medicine, 5-year programs are designed to use time more efficiently to train these individuals for academic careers in nuclear medicine. Early identification of these individuals can be achieved by selection at the time of application for diagnostic radiology residency. A separate match number can be used for the combined program.

The goal of the 4-year combined programs is to increase the number of radiologists who are also well trained nuclear medicine physicians and to do so in a cost-effective way. The federal government currently spends about \$9 billion each year on graduate medical education (GME), and some proposals have targeted reducing this funding by one-half to one-third. If funding were to decrease, it is likely that the greatest effect would be on non-primary care specialties such as nuclear medicine. In addition, the federal government reimburses fellowship training (nuclear medicine training after completion of radiology training) at only half the rate of initial specialty training.

As a result, a few nuclear medicine training programs do not accept radiologists. If funding for GME is significantly decreased in the future, more nuclear medicine programs may be unable to accept radiologists. This would be unfortunate, because hybrid imaging has increased the need for diagnostic radiologists who are well trained in nuclear medicine. The combined 4-year diagnostic radiology/16-month nuclear medicine training program provides a viable alternative pathway for training radiologists should GME funding be cut.

Unanswered questions remain about how best to design these combined programs. Both the 4- and 5-year programs require that trainees be identified early in their training. Some of these individuals may change their minds and decide to pursue another subspecialty in radiology. Some radiology trainees may decide relatively late in their training that they want to undertake a combined program. We are grateful to the innovative training programs that are helping to find the answers to these important questions.



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## 2013 Contribution List

The ABNM appreciates all the diplomates who support the ABNM by paying MOC fees and voluntary contributions every year. In addition, we would like to thank the following diplomates for their generous support of the ABNM through a financial donation in 2013.

### Platinum ( > \$2,000)

Anonymous Donation

### Gold (\$1000-\$1999)

Dr. Vaseem Chengazi  
Dr. Dominique Delbeke  
Dr. Steven Larson  
Dr. Kenneth McCoy

### Silver (\$500-\$999)

Dr. Charles Boyd  
Dr. Leonie Gordon  
Dr. Edward Huycke  
Dr. Robert Jones  
Dr. Sam Krinsky  
Dr. David Mankoff  
Dr. Robert Matthews  
Dr. Helen Nadel  
Dr. John Parker  
Dr. Yogeshkumar Patel  
Dr. Henry Royal  
Dr. Vimal Sodhi  
Dr. Jian Yu

### Bronze (\$200-\$499)

Dr. Jorge Brito  
Dr. Rudsen Bueser  
Dr. Robert Carretta  
Dr. Eva Dubovsky

### Bronze (\$200-\$499) *continued*

Dr. Marcial Favila  
Dr. Michael Goris  
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Dr. Anton Johnson  
Dr. Harold Scheinman  
Dr. Jerold Wallis  
Dr. Chi-Kwan Yen  
Dr. Harvey Ziessman

### Technetium (Up to < \$199)

Dr. Frank Altomare, Jr.  
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Dr. Stephen Gerard  
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Dr. Kamal Greiss  
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## New Diplomates Who Passed the 2013 Certification Examination

Garima Agrawal, MB BS, M.D.

Zi Yazan Alabed, M.D., Ph.D.

Karen L. Ayres, M.D.

Lucas Kyle Buckley, M.D.

Patrick M Colletti, M.D.

Daniel Andrew Craven, Jr., M.D.

Adam Christopher Robert Danielson, M.D., MPH

Guido Alejandro Davidzon, M.D., SM

Paul Julian Didomenico, M.D.

Ryan T. Downey, M.D.

Michael David Farwell, M.D.

Verônica Rolim Sales Fernandes, M.D., Ph.D.

Kenneth Leslie Gage, M.D., Ph.D.

Michael Lawrence Gent, M.D.

Vergheese George, MB BS

Michael James Golden, M.D.

Aron Jay Gould-Simon, M.D.

Aileen Louise Green, M.D., Ph.D.

Justin Haba, M.D.

Chester Earl Harrison, Jr., M.D., M.S.

Lee Christopher Holt, M.D.

Thomas A. Hope, M.D.

Ali Hosseini Rivandi, M.D.

Eric Burton Hutchins, M.D.

Feraas Jabi, M.D.

Mehrbod Som Javadi, M.D.

Geoffrey B. Johnson, M.D., Ph.D.

Mickaila Johnston, M.D.

Arnold Kang, MB BS

Marcus Michael Kessler, M.D.

Gauri Rahul Khorjekar, M.D.

Rekha I. Kishore, M.D.

Jennifer Jihyang Kwak, M.D.

Francisco Lazaga, M.D.

Juan Diego Lozano, M.D.

Nghi M. Lu, M.D.

Lorenzo Mannelli, M.D., Ph.D.

Mehrdad Mansouri, M.D., Ph.D.

Joyce Chipso Mhlanga, M.D.

Olga Pavlovna Molchanova-Cook, M.D., Ph.D.

Valeria M Moncayo, M.D.

William A. Moore, M.D.

Saima Muzahir, MB BS, M.D.

Judy Nguyen, M.D.

Jorge Daniel Oldan, M.D.

Fathima Fijula Palot Manzil, MB BS, DMRT

Sarah Pauley, M.D., Ph.D.

Nicholas A Plaxton, M.D.

Maria Rosana Ponisio, M.D.

Amir H. M Rad, M.D.

Dhanashree Abhijit Rajderkar, M.D.

Hamilton Elizabeth Reavey, M.D.

Brijesh V. Reddy, M.D.

Rabinder Singh Sandhu, M.D., MPH

Papia Sen, M.D.

Justin Brett Sims, M.D.

Jagadeesh Som Singh, M.D., FRCR

Evan Sirc, M.D.

Rathan Markandan Subramaniam, M.D., Ph.D., MPH

Amar Suchak, M.D., FRCPC

Razia Sultana, M.D., Ph.D.

Bashir Akhavan Tafti, M.D.

Wayne Tran, M.D.

Katie Suzanne Traylor, DO

Nishant Verma, M.D.

Penny Vroman, M.D.

Jason Wayne Wachsmann, M.D.

Xiaofei Wang, M.D., Ph.D.

Ilana Simone Warsofsky, M.D.

Trisha Youn, M.D.

Ehab Hassan A. Youssef, MB BCh, M.D., FRCR

Salem Ayad Yuoness, M.D.

Yuyang Zhang, M.D., Ph.D.



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## Diplomates Who Passed the 2013 MOC Examination

Michael Aldo Arcomano, M.D.

Charles D. Arnold, M.D.

Alexandru Cristian Bageac, M.D.

Jon A. Baldwin, DO

Maria Rita Beltran, M.D.

Lorna Ong Blando, M.D.

Geoffrey R. Bodeau, M.D.

Shahram Bonyadlou, M.D.

Randall Brodsky, DO

L. Steven Bujenovic, M.D.

Anne Constantia Bullock, M.D.

David William Camacho, Jr., M.D.

Puneet Chandak, M.D.

Subhash Chander, M.D.

Kwang J Chun, M.D.

Marcelo Fernando Di Carli, M.D.

Indukala Doddamane, MB BS

David A. Earl-Graef, M.D.

Shehab Elshazly, MB ChB

Jocelyn Impas Espiritu, M.D.

Joanna R. Fair, M.D., Ph.D.

Leonard M. Freeman, M.D.

Vazul Frank Gabor, M.D.

Sherief H. Gamie, M.D., Ph.D.

Lynn M Gilles, M.D.

Peter D Giuliano, M.D.

Sibyll Goetze, M.D.

Karsten Grabski, M.D.

Erin Grady, M.D.

Elizabeth Louise Greenstein, M.D.

Ming He, M.D.

June M Herman, M.D.

Linh Thuy Ho, M.D.

Ming Kang Dennis Hsueh, M.D.

Heather Alison Jacene, M.D.

Pradeep Kumar Jacob, M.D.

Wayne E. Jacobs, M.D.

Manoj Kumar Jain, MB BS

Robert S Jones, M.D.

Laurie B. Jones-Jackson, M.D.

John P. Kalabat, M.D.

Lisa Mojdeh Kalimi, M.D.

Stephen Joseph Kennedy, M.D.

Sabir Ali Khan, M.D.

Sunhee Kim, M.D.

Andrew Kim, M.D.

Lale Kostakoglu, M.D., MPH

Liren Kuang, M.D.

Kanchan P Kulkarni, MB BS

Sophia T. Kung, M.D.

Phillip Hsin Kuo, M.D., Ph.D.

Walter P. Kwan, M.D.

Judith LaBarbera, M.D.

Steven Mark Larson, M.D.

Chung Lee, M.D.

Tong Li, M.D.

Brian T. Lipman, M.D.

Letty Goodman Lutzker, M.D.

Victoria Elaine Major, M.D.

Veena Rani Mathur, M.D.

Sara Kathleen Koscielski Meibom, M.D.

Carol E Menzel-Anderson, M.D.

Darlene Metter, M.D.

Robert Steven Miletich, M.D., Ph.D.

David M Milstein, M.D.

Jamil Mohsin, MB BS

Irma L. Molina-Vicenty, M.D.

Gregory James Morse, M.D.

Jeffrey Brian Nemeroff, M.D.

Rodolfo F. Núñez, M.D.

Sebastian Obrzut, M.D.

Hasan G Osman, M.D.

Saabry Yusof Osmany, MB BS

Diane T. Pap, M.D.

Jayashree Parekh, MB BS

Vincent Leo Perez, M.D.

Orrin Woodhull Perkins, M.D.

Kelly H Pham, DO

Anthony F Posteraro, M.D.

Thomas R. Pounds, M.D.

Daniel A. Pryma, M.D.

Feng Qing, M.D., Ph.D.

Chetan D Rajadhyaksha, M.D.

Alan Ira Rebenstock, M.D.

Vishala G Reddy, MB BS

Helene Reich, M.D.

Russell Lynn Roberts, Jr., M.D.

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John Nelson Rydberg, M.D., Ph.D.

Amadeu Federico Santos, M.D.

Lawrence Adam Saperstein, M.D.

Ramadass Satya, MB BS, M.D.

Frank V. Schraml, M.D.

George C. Scott, M.D.

Efrosyni Sfakianaki, M.D.

Kambiz Kevin Shamlou, M.D.

Anwer Sheikh, M.D.

Arif Sheikh, M.D.

Barry Alan Siegel, M.D.

Rajinder Pal Singh, M.D., Ph.D.

Reed K. Smith, M.D.

Vimal Kumar Sodhi, M.D.

Richard H. Stern, M.D.

Rajiv K Tangri, DO

Visweswara R Tatini, M.D.

Aju Thomas, MB BS

Kathy L Thomas, M.D.

Hung Tsang, M.D.

Jeffrey Tseng, M.D.

David Bryan Turton, M.D.

George R. Watson, M.D.

Irving Weinberg, M.D., Ph.D.

Steven M. Westphal, M.D.

Robert James Witte, M.D.

Ching Yee Oliver Wong, M.D., Ph.D.

Ronald B. Workman, Jr., M.D.

Guiyun Wu, M.D.

Zhiyun Yang, M.D.

Don Chan Yoo, M.D.

Jian Q. Yu, M.D.

Jianzhong Zhang, M.D.

Martin Zloty, M.D.